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Scaling the TBNLC Collider Design to Higher Frequencies*

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The TBNLC collider design uses Relativistic Klystron Two-Beam Accelerator (RK-TBA) units as the rf power source for a NLC-type linac at 11.4 GHz. In this paper we report on a simple analysis of using RK-TBA units as a rf power source for a CLIC-type linac at 30-GHz. The desired rf macropulse duration is less than 50 ns and the repetition rate is many hundred hertz. For this system we are proposing to use magnetic pulse-compression units driving ferrite-core induction cells. Many elements of the TBNLC layout can remain the same for a collider design at this higher frequency.

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